AK700

Dalang Communication Technology Co., Ltd Product Specification

Product Name:	GNSS ANTENNA
Product Model:	AK700
Version Number:	V 1.0
Revision Date:	2024.07.05

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1 Product Application Scenarios

The AK700 is an external measurement antenna that covers GPS, GLONASS, BDS, and GALILEO systems, meeting the current demand for multi-system compatibility in measurement equipment. It can be widely used in geodetic surveying, marine surveying, channel surveying, dredging surveying, earthquake monitoring, bridge deformation monitoring, landslide monitoring, dock container operations, smart agriculture, driving test training, and other scenarios. See Figure 1for details.

Figure 1 Product Application Scenarios

2 Features

In this chapter, we will delve into and comprehensively elaborate on the functionalities and operating principles of the AK700, detailing how it plays a pivotal role in various applications as follows:

1. High precision: The antenna features high gain and a wide beamwidth, ensuring strong signal reception even at low elevation angles. This allows for rapid satellite lock and stable GNSS signal output even in obstructed and complex environments.
2. The antenna's LNA has excellent out-of-band rejection performance, suppressing unwanted electromagnetic signals and preventing interference from other wireless communication systems, such as power grids, communication base stations, and radio stations. This effectively reduces the risk of system signal loss.
3. The antenna employs a multi-feed point design to align the phase center with the geometric center, minimizing measurement errors.
4. Supports full-band signals from the four GNSS systems.
5. Reliable structure with an IP67 protection rating.
6. Strong anti-interference capability, capable of withstanding harsh working environments.
7. The stable phase center ensures millimeter-level positioning accuracy.

3 Structural Characteristic

In this section, we will conduct an in-depth analysis of the product's design details, presenting its aesthetic features and precise interface specifications through detailed structural diagrams. This perspective aims to provide a comprehensive framework, thereby enhancing the understanding and perception of the product's architecture. Refer to Figure 2,Figure 3 , Figure 4.

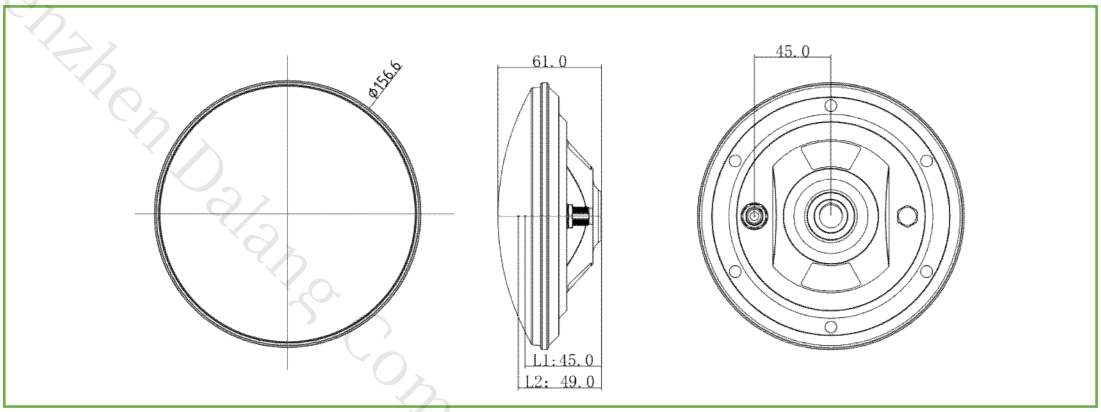

Figure 2 Product structure diagram

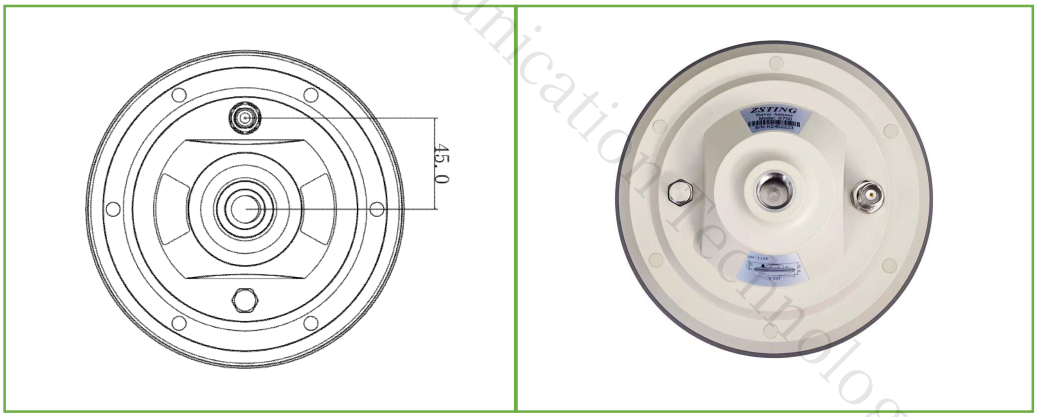

Figure 3 Product correlation chart

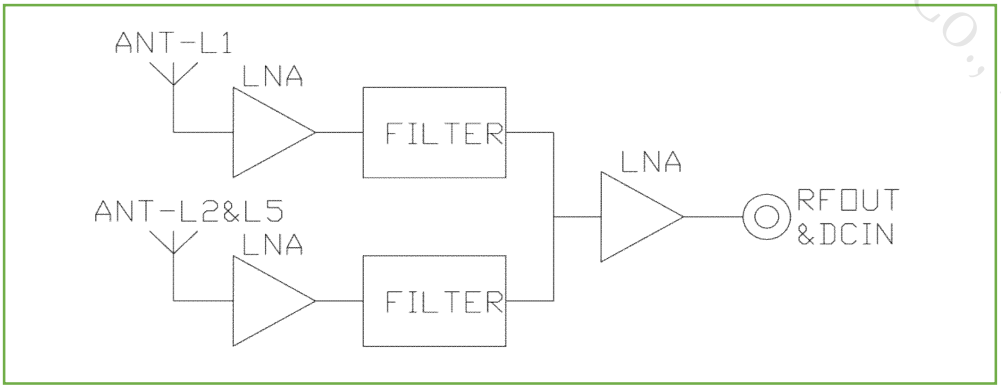

Figure 4 Process flow diagram

4 Specifications

In this section, we will provide a detailed list and explanation of the product's chip features, sensitivity, accuracy, operating principles, and other technical details, as detailed in Table 1.

Table 1 Product Specifications

II. Specification			
Electrical Characteristics	1	Frequency Range	GPS: L1, L2, L5 BDS: B1I, B2I, B3I, B2a, B2b GLONASS: L1, L2, L3 Galileo: E1, E5b, E5a, E6 QZSS: L1, L2, L5, L6 IRNSS: L5 L-BAND
	2	Output Standing Wave	≤2.0
	3	Antenna Axial Ratio	≤3dB
	4	Maximum Gain	5.5dBi
	5	Phase Center	±2mm
	6	Impedance	50Ω
	7	Polarization Mode	RHCP
LNA Specifications	1	LNA	L1:38±2dB L2:38±2dB
	2	VSWR	≤2.0
	3	Noise Figure	≤1.8dB
	4	In-band Flatness	1dB
	5	Operating Voltage	3.3～12V
	6	Operating Current	≤45 mA
	7	Differential Transmission Delay	≤5ns
Structural Characteristics	1	Antenna Size	Φ156.6*61mm
	2	Weight	≤380g
	3	Connector Type	TNC
	4	Thread Specification	Unified National Coarse (UNC) 5/8"×11 (Imperial)

	5	Mounting Method	centering rod mounting
Environmental Conditions	1	Operating Temperature	-40℃～+85℃
	2	Storage Temperature	-55℃～+85℃
	3	Humidity	95% non-condensing

5 Product Photos

In this chapter, we will showcase real-life images of the product, as shown in Figure 5. These images provide a detailed view of our product from various angles and perspectives. We believe that through authentic representation, we can better convey the value and concept of the product, thereby enhancing your trust and satisfaction.

Figure 5 Product Images